

REMARKS

In the Office Action, claims 1-7, 10, 11 and 13 - 21 were rejected. Claims 8, 9 and 12 were objected to. By the present response, claims 1, 10, 12 and 15 are amended, and claims 2, 3, 11 and 16 are canceled. Upon entry of the amendments, claims 1, 4-10, 12-15 and 17-21 will remain pending in the present application. All pending claims are believed to be in condition for allowance, and their reconsideration and allowance are requested.

Rejections Under 35 U.S.C. § 103(a)

Claims 1-7, 10, 11 and 13 - 21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Helmig et al. (U.S. Patent Application Publication 2001/0022804, hereinafter "Helmig") in view of Lenhardt et al. (U.S. Patent 5,079,716, hereinafter "Lenhardt"). Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art.

Independent claims 1 and 15 are amended to recite a battery charging device configured for charging the battery assembly. Independent claim 10 is amended to particularly recite a step of controlling a charge in the battery assembly based on monitored temperature. Applicants respectfully assert that the present invention, as recited in independent claims 1, 10, 15, 20 and 21 is patentable over Helmig in view of Lenhardt.

Claim 1 and the Claims Depending Therefrom

Claim 1 recites a temperature monitoring system configured for measuring temperature of a battery assembly. Claim 1, as amended, also recites battery temperature control circuitry coupled to the battery temperature monitoring circuitry and configured to generate a control signal based upon the measured temperature

signal. The claim further recites *a battery charging device* coupled to the battery temperature control circuitry and configured for charging the battery assembly based on the control signal. Dependent claims 2 and 3 are canceled because the subject matter of claims 2 and 3 is now included in the amended version of claim 1.

With respect to Helmig, the reference teaches fiber optic temperature measurement and, more particularly, a method of measuring temperature using fiber optics. Helmig also teaches use of a fiber optic temperature sensor capable of on-line monitoring of energy-producing or energy-consuming devices, and apparatus for temperature detection utilizing fiber Bragg gratings. This reference does not describe any battery charging device coupled to any battery temperature control circuitry and configured for charging a battery assembly based on a control signal.

With respect to Lenhardt, this reference teaches a method and apparatus for *estimating the temperature of a vehicle battery*, wherein *the estimated temperature is used to control the voltage at which the vehicle battery is charged*. This reference primarily relates to *temperature estimation* of a vehicle battery and the use of such estimates for batter charge control. As such, Lenhardt actually teaches away from the use of measured temperatures for such purposes. This is clear from the Abstract at page 1. The lines 4 – 22 of the Abstract read:

The variables used to estimate the temperature of the vehicle battery can include a reference temperature sensed from one or more temperature sensors located apart from the battery, and a group of coefficients. Each type of vehicle using the vehicle battery temperature estimation method utilizes a group of coefficients tailored specifically for the vehicle. For a given type of vehicle, empirical data is compiled for determining the specific group of coefficients for the vehicle. This data is compiled by operating the vehicle, and periodically sampling and storing the vehicle speed, the reference temperature, the actual battery temperature, and the elapsed time between samplings. From this

data a group of coefficient is determined for the vehicle. The coefficients are then utilized by the vehicle control unit to estimate battery temperature. Based upon the estimated battery temperature, the control unit then can control the voltage at which the vehicle battery is charged. illustrates an evaluation circuit in the form of a network-supplied differential current or fault current relay. The phase angle between the first and second network variables is determined in the differential current relay. The product of the amplitude of the AC component of the differential current and the cosine of the phase angle between the two network variables detected is ascertained, as a measure for the resistive fault current of the network.

Thus, Lenhardt fails to disclose a battery charging device coupled to battery temperature control circuitry and configured for charging a battery assembly *based on a measured temperature signal*.

Moreover, as there is no suggestion to be found in either reference that the temperature of the battery assembly can or should be measured to control charging of the battery, there is no motivation to combine these two references to arrive at the invention as claimed.

Thus, even in combination, Helmig and Lenhardt fail to teach, or suggest a battery charging device coupled to battery temperature control circuitry and configured for charging a battery assembly based on a measured temperature signal. Thus, Helmig and Lenhardt, cannot support a *prima facie* case of obviousness of the independent claim 1.

Further, claims 4, 5, 6, 7, 8 and 9 depend directly from independent claim 1 and are allowable by virtue of such dependency, as well as for the subject matter they separately recite. Thus, it is respectfully requested that the rejection of claim 4, 5, 6, 7, 8 and 9 under 35 U.S.C 103(a) be withdrawn.

Claim 10 and the Claims Depending Therefrom

Claim 10 recites a method for monitoring temperature of a battery assembly. Claim 10 has been amended to include a step of controlling a charge in the battery assembly based on monitored temperature. Dependent claim 11 is canceled because its subject matter of claim 11 is now included in the amended version of claim 10. Dependent claim 12 is amended to modify the step of generating a control signal by including "controlling of the charge in the battery assembly". Dependent claim 12 is further amended to exclude the recitation of charging the battery assembly based on the control signal, which is already included in the amended version of claim 10.

As noted above, neither Helmig nor Lenhardt specifically teach or suggest controlling charging of a battery assembly based on monitored temperature. As Helmig and Lenhardt, alone or in combination, fail to teach all of the recitations of amended claim 10, a *prima facie* case of obviousness of the independent claim 10 cannot be supported.

Claims 12, 13 and 14 depend directly on independent claim 10 and are allowable by virtue of such dependency, as well as for the subject matter they separately recite. Thus, it is respectfully requested that the rejection of claims 12, 13 and 14 under 35 U.S.C 103(a) be withdrawn.

Claim 15 and the Claims Depending Therefrom

Claim 15 recites an optical temperature monitoring and control system configured for measuring temperature of a battery assembly. Claim 15 has been amended by this response to recite *a battery charging device* coupled to battery temperature control circuitry and configured for charging the battery assembly based on a control signal. Dependent claim 16 is canceled because its subject matter is now included in the amended version of claim 15.

As noted above, neither Helmig nor Lenhardt specifically teach or suggest a charging device coupled to battery temperature control circuitry and configured for charging

a battery assembly based on a measured temperature signal. Helmig and Lenhardt, therefore, cannot support a *prima facie* case of obviousness of the independent claim 15.

Further, claims 17, 18 and 19 depend directly on independent claim 15 and are allowable by virtue of such dependency, as well as for the subject matter they separately recite. Thus, it is respectfully requested that the rejection of claims 17, 18 and 19 under 35 U.S.C 103(a) be withdrawn.

Claim 20 and the Claims Depending Therefrom

Claim 20 recites a method for optically monitoring temperature and controlling the charging of a battery assembly. Claim 20 recites, *inter alia*, a step of controlling a charge in the battery assembly based on the measured temperature.

As noted above, neither Helmig nor Lenhardt specifically teach or suggest controlling charge of the battery assembly based on measured temperature. As Helmig and Lenhardt, alone or in combination, fail to teach all of the recitations of amended claim 20, a *prima facie* case of obviousness of the independent claim 20 cannot be supported.

Claim 21 and the Claims Depending Therefrom

Claim 21 recites a system for monitoring temperature of a battery assembly. Claim 21 recites, *inter alia*, a means for controlling a charge in the battery assembly based on the measured temperature.

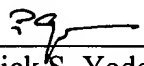
As noted above, neither Helmig nor Lenhardt specifically teach or suggest controlling charge of the battery assembly based on measured temperature. As Helmig and Lenhardt, alone or in combination, fail to teach all of the recitations of claim 21, a *prima facie* case of obviousness of the independent claim 21 cannot be supported.

Conclusion

In view of the remarks and amendments set forth above, Applicants respectfully request allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this Application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

Date: 12/20/2005



Patrick S. Yoder
Reg. No. 37,479
FLETCHER YODER
P.O. Box 692289
Houston, TX 77269-2289
(281) 970-4545